APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,676	05/23/2000	MOR HARCHOL-BALTER	MIT-118	3928

21323   7590   09/18/2003

TESTA, HURWITZ & THIBEAULT, LLP
HIGH STREET TOWER
125 HIGH STREET
BOSTON, MA 02110

EXAMINER
RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
2665	9

DATE MAILED: 09/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/576,676	HARCHOL-BALTER ET AL.
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _23 May 2000_ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-27_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-27_ is/are rejected.

7) ☒ Claim(s) _25 and 27_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _23 May 2000_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _7_ .	6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement filed 11/6/2000 fails to comply with 37 CFR

1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that

portion which caused it to be listed; and all other information or that portion which caused it to

be listed. It has been placed in the application file, but the information referred to therein has not

been considered.

Drawings

2.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

include the following reference sign(s) not mentioned in the description: ref. 4 (see Figs. 2, 4, 8,

and 9 and pages 9, 10, 15, and 22-24) and step 40 (see Fig. 9 and pages 23-24). A proposed

drawing correction, corrected drawings, or amendment to the specification to add the reference

sign(s) in the description, are required in reply to the Office action to avoid abandonment of the

application. The objection to the drawings will not be held in abeyance.

Specification

3.   The abstract of the disclosure is objected to because it exceeds 150 words in length.

Correction is required. See MPEP § 608.01(b).

4.   The disclosure is objected to because of the following informalities: on page 7, line 11

"two the other" should be "two of the other".

        Appropriate correction is required.

Claim Objections

5.   Claims 25 and 27 are objected to because of the following informalities: claims 25 and

27 comprise multiple sentences. Claims 25 and 27 should read "to the first/second node; and

wherein step" rather than "to the first/second node. And wherein step". Appropriate correction is

required.

Claim Rejections - 35 USC § 112

6.   Claims 10 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

7.   The term "a small number" in claims 10 and 24 is a relative term which renders the claim

indefinite. The term "a small number" is not defined by the claim, the specification does not

provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would

not be reasonably apprised of the scope of the invention. For the purposes of prior art rejections,

the term "a small number" will be broadly interpreted.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 1, 4-11, 14, 15, and 18-27 are rejected under 35 U.S.C. 102(e) as being

anticipated by Brady (USPN 6,041,049).

10.   Regarding claims 1 and 14, Brady teaches a method for discovery of cooperating nodes

in a network of nodes in which each cooperating node has information about at least one other

cooperating node (col. 2, lines 48-67), comprising the steps of: (a) selecting, by a first node, from

cooperating node information available to the first node, a second node (col. 2, lines 48-67); (b)

transmitting from the first node to the second node at least a portion of the cooperating node

information available to the first node (col. 2, lines 48-67); (c) periodically repeating steps (a)

and (b) (col. 2, lines 48-67).

11.   Regarding claim 4, referring to claim 1, Brady discloses that step (a) comprises choosing

from an ordered list (list of neighbor nodes), by a first node, from cooperating node information

available to the first node, a second node (col. 2, lines 48-67).

12.   Regarding claim 5, referring to claim 1, Brady discloses that step (a) comprises choosing

by a first node, from cooperating node information stored in the first node, one second node (col.

2, lines 48-67) where it is inherent that one node is chosen since all neighboring nodes are

chosen.

13.   Regarding claim 6, referring to claim 1, Brady discloses that step (b) further comprises

transmitting from the first node to the second node at least a portion of the cooperating node

information available to the first node (col. 2, lines 48-67), said cooperating node information

comprising a list of cooperating nodes and resources available (routes) at each cooperating node

(col. 2, lines 48-67).

14.   Regarding claim 7, referring to claim 1, Brady discloses that step (b) comprises

transmitting from the first node to the second node at least a portion of the cooperating node

information available to the first node, said at least a portion of the cooperating node information

comprising all of the first node's cooperating node information (col. 2, lines 48-67 and col. 4,

lines 18-21).

15.   Regarding claim 8, referring to claim 1, Brady disclose that step (c) comprises

periodically repeating steps (a) and (b) by each of the cooperating nodes (col. 2, lines 48-67 and

col. 3, lines 45-55).

16.   Regarding claim 9, referring to claim 1, Brady discloses that step (a) comprises selecting,

by a first node, from cooperating node information available to the first node, a second

cooperating node and a third cooperating node (col. 2, lines 48-67); and step (b) comprises

transmitting from the first node to the second node and the third node the cooperating

information available to the first node (col. 2, lines 48-67).

17.   Regarding claim 10, referring to claim 1, Brady discloses that step (a) comprises

selecting, by a first node, from cooperating node information available to the first node, a small

number of cooperating nodes (col. 2, lines 48-67); and step (b) comprises transmitting from the

first node to the small number of cooperating nodes the cooperating information available to the

first node (col. 2, lines 48-67) where a "small number" is a relative term that is open to a variety

of interpretations.

18.   Regarding claim 11, referring to claim 1, Brady discloses after step (b) and prior to step

(c), the step of: (b1) merging, by the second node, the cooperating node information transmitted

by the first node with cooperating node information available to the second node (col. 4, lines

18-41); and wherein step (c) comprises periodically repeating steps (a), (b), and (b1) (col. 2, lines

48-67 and col. 4, lines 18-41).

19.   Regarding claim 15, Brady discloses a method for discovery of cooperating nodes in a network of nodes in which each cooperating node has information about at least one other cooperating node, comprising the steps of: (a) selecting, by a first node, from cooperating node information available to the first node, a second cooperating node (col. 2, lines 48-67); (b) requesting, by the first node, from the second node, at least a portion of the cooperating node information available to the second node (col. 2, lines 48-67); (c) receiving, by the first node, from the second node, at least a portion of the cooperating node information available to the second node (col. 2, lines 48-67); (d) periodically repeating steps (a), (b), and (c) (col. 2, lines 48-67).

20.   Regarding claim 18, referring to claim 15, Brady discloses that step (a) comprises choosing from an ordered list (list of neighbor nodes), by a first node, from cooperating node information available to the first node, a second node (col. 2, lines 48-67).

21.   Regarding claim 19, referring to claim 15, Brady discloses that step (a) comprises choosing by a first node, from cooperating node information stored in the first node, one cooperating node (col. 2, lines 48-67) where it is inherent that one cooperating node is chosen since all neighboring nodes are chosen.

22.   Regarding claim 20, referring to claim 15, Brady discloses that step (b) further comprises requesting, by the first node, from the second node, at least a portion of the cooperating node information available to the second node (col. 2, lines 48-67), said cooperating node information comprising a list of cooperating nodes and resources (routes) available at each cooperating node (col. 2, lines 48-67).

23.   Regarding claim 21, referring to claim 15, Brady discloses that step (b) comprises

requesting, by the first node, from the second node, at least a portion of the cooperating node

information available to the second node (col. 2, lines 48-67), said at least a portion of the

cooperating node information comprising all of the second node's cooperating node information

(col. 2, lines 48-67 and col. 4, lines 18-21).

24.   Regarding claim 22, referring to claim 15, Brady discloses that step (d) comprises

periodically repeating steps (a), (b), and (c) by each of the cooperating nodes (col. 2, lines 48-67

and col. 3, lines 45-55).

25.   Regarding claim 23, referring to claim 15, Brady discloses that step (a) comprises

selecting, by a first node, from cooperating node information available to the first node, a second

cooperating node and a third cooperating node (col. 2, lines 48-67); step (b) comprises

requesting, by the first node, from each of the two selected cooperating nodes, at least a portion

of the cooperating node information available to each of the respective second node and third

node (col. 2, lines 48-67); step (c) comprises receiving, by the first node, from each of the second

node and the third node, at least a portion of the cooperating node information available to each

of the second node and the third node (col. 2, lines 48-67).

26.   Regarding claim 24, referring to claim 15, Brady discloses that step (a) comprises

selecting, by a first node, from cooperating node information available to the first node, a small

number of cooperating nodes (col. 2, lines 48-67); step (b) comprises requesting, by the first

node, from each of the small number of selected cooperating nodes, at least a portion of the

cooperating node information available to each of the respective selected cooperating nodes (col.

2, lines 48-67); step (c) comprises receiving, by the first node, from each of the small number of

selected cooperating nodes, at least a portion of the cooperating node information available to

each of the respective selected cooperating nodes (col. 2, lines 48-67) where a "small number" is

a relative term that is open to a variety of interpretations.

27.   Regarding claim 25, referring to claim 15, Brady discloses after step (c) and prior to step

(d), the step of: (c l) merging, by the first node, the received cooperating node information with

cooperating node information available to the first node (col. 4, lines 18-41) and wherein step (c)

comprises periodically repeating steps (a), (b), (c l) and (c) (col. 2, lines 48-67 and col. 4, lines

18-41).

28.   Regarding claim 26, referring to claim 15, Brady discloses before step (d) the step of:

(aa) transmitting from the first node to the second node, at least a portion of the cooperating node

information available to the first node (col. 2, lines 48-67); and wherein step (d) comprises

periodically repeating steps (aa), (a), (b), and (c) (col. 2, lines 48-67).

29.   Regarding claim 27 referring to claim 26, Brady discloses after step (aa), the step of (bb)

merging, by the second node, the cooperating node information transmitted by the first node with

cooperating node information available to the second node (col. 4, lines 18-41) and wherein step

(d) comprises periodically repeating steps (aa), (bb), (a), (b), and (c) (col. 2, lines 48-67 and col.

4, lines 18-41).

Claim Rejections - 35 USC § 103

30.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

31.   Claims 2, 3, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Brady (USPN 6,041,049) as applied to claims 1 and 15 above, and further in view of Flammer

(USPN 5,007,052).

32.   Regarding claims 2 and 16, referring to claims 1 and 15, Brady discloses selecting each

neighbor node from cooperating node information; however, Brady does not disclose how each

neighbor node is selected from the cooperating node information. As such, Brady does not

disclose that (a) comprises randomly choosing by a first node, from cooperating node

information available to the first node, a second cooperating node. Flammer teaches, in a system

for broadcasting information (transmitting to all neighbor nodes), that it is well known in the art

to decrease overload in a network during a broadcast by "selectively but randomly address[ing] a

small group of nodes in a reception region" (col. 1, lines 53-57). The combination of Brady and

Flammer suggests randomly selecting a single neighbor node or a set of neighbor nodes from the

entire list of neighbor nodes in order to reduce the overhead in the system at the cost of

increasing the amount of time (increasing the number of repeated steps) it takes to determine the

topology of the network. It would have been obvious to one of ordinary skill in the art at the time

of the invention to randomly choose by a first node, from cooperating node information available

to the first node, a second cooperating node in order to decrease the bandwidth used by the

system to determine the topology of the system.

33.   Regarding claims 3 and 17, referring to claims 1 and 15, Brady discloses selecting each

neighbor node from cooperating node information; however, Brady does not disclose how each

neighbor node is selected from the cooperating node information. As such, Brady does not

disclose that step (a) comprises pseudo-randomly choosing by a first node, from cooperating

node information available to the first node, a second node. Flammer teaches, in a system for

broadcasting information (transmitting to all neighbor nodes), that it is well known in the art to

decrease overload in a network during a broadcast by "selectively but randomly address[ing] a

small group of nodes in a reception region" (col. 1, lines 53-57). The combination of Brady and

Flammer suggests randomly selecting a single neighbor node or a set of neighbor nodes from the

entire list of neighbor nodes in order to reduce the overhead in the system at the cost of

increasing the amount of time (increasing the number of repeated steps) it takes to determine the

topology of the network. Flammer expressly discloses randomly selecting neighbor(s); however,

Examiner takes official notice that pseudo-random selection is another well-known selection

technique that substitutes for random selection. It would have been obvious to one of ordinary

skill in the art at the time of the invention to pseudo-randomly choose by a first node, from

cooperating node information available to the first node, a second cooperating node in order to

decrease the bandwidth used by the system to determine the topology of the system using a

selection technique well-known in the art.

34.   Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brady

(USPN 6,041,049).

35.   Regarding claim 12, referring to claim 1, Brady discloses prior to step (c), the steps of:

(b1) requesting, by the first node, from the second node, at least a portion of the cooperating

node information available to the second node (col. 2, lines 48-67); (b2) receiving, by the first

node, from the second node, at least a portion of the cooperating node information available to

the second node (col. 2, lines 48-67); and wherein step (c) comprises periodically repeating steps

(a), (b), (b1), and (b2) (col. 2, lines 48-67). Brady does not expressly disclose that the steps (b1)

and (b2) occurs after step (b) and prior to step (c); however, it would have been obvious to one of ordinary skill in the art at the time of the invention that step (b) and steps (b1) and (b2) are interchangeable since a reversal of the order of the steps will not result in a different outcome for the topology. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to perform steps (b1) and (b2) after step (b) and before step (c).

36.   Regarding claim 13, referring to claim 1, Brady discloses prior to step (c), the steps of (b1) merging, by the second node, the cooperating node information transmitted by the first node with cooperating node information available to the second node after step (b) (col. 4, lines 18-41); (b2) requesting, by the first node, from the selected cooperating node, at least a portion of the cooperating node information available to the second node (col. 2, lines 48-67); (b3) receiving, by the first node, from the selected cooperating node, at least a portion of the cooperating node information available to the second node (col. 2, lines 48-67); (b4) merging, by the first node, the cooperating node information transmitted by the second node with cooperating node information available to the first node (col. 2, lines 48-67); and wherein step (c) comprises periodically repeating steps (a), (b), (b 1), (b2), (b3), and (b4) (col. 2, lines 48-67). Brady does not expressly disclose that the steps (b2)-(b4) occurs after step (b) and prior to step (c); however, it would have been obvious to one of ordinary skill in the art at the time of the invention that step (b) and steps (b2)-(b4) are interchangeable since a reversal of the order of the steps will not result in a different outcome for the topology. As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to perform steps (b2)-(b4) after step (b) and before step (c).

Conclusion

37.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Serkowski (USPN 5,914,939) see col. 1, lines 11-25 and col. 3, line 8-col. 4, line 9

which pertains to overloading a network by broadcasting topology updates, merging routing

tables, and allowing changes to quickly propagate through the network. Conlon (USPN

5,051,987) see entire document which pertains to discovering the topology of a network.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The

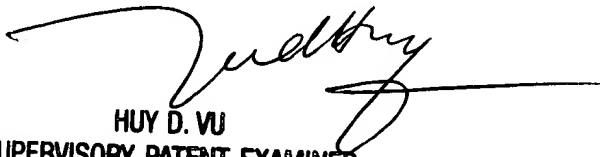examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703)305-3900.

Daniel J. Ryman
Examiner
Art Unit 2665

DJR

Daniel J. Ryman

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600